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Cutoff rigidity in the Galactic magnetic field

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More than 80 years after the discovery of UHECRs, many questions remain about possible sources, mechanisms of acceleration, propagation, and so on. An important aspect of research is the analysis of their motion in the magnetic field of the Galaxy, which implies, first of all, model calculations. New works devoted to such an analysis appear with the accumulation of experimental observations of the field and the development of the corresponding models.
The current work is devoted to the calculation of the magnetic cutoff rigidity of cosmic rays in the Galactic field. We calculate the movement of charged particles in the Milky Way using the toolkit developed by our scientific group. The calculation is performed in a modified JF12 model. We investigate the residence time of particles with different energies in the galactic disk and construct a map of the magnetic cutoff for an observer on the Earth. The influence of the simulated sizes of turbulent inhomogeneities on the result is considered.

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